

PM

Notice of Allowability

Application No.

10/669,901

Examiner

Jasmine J. Clark

Applicant(s)

KENNETH B. GILLES

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/27/04.
2. ☒ The allowed claim(s) is/are 1-45.
3. ☒ The drawings filed on 24 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>12/18/03, 12/27/04</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

JASMINE CLARK
PRIMARY EXAMINER

Jasmine Clark

Election/Restrictions

1. Applicant's election with traverse of Group I in the reply filed on 12/27/04 is acknowledged. The traversal is on the ground(s) (in pages 9-12) that "...claim 41 recites a similar process requiring placing a cap in contact with an IC device... Claim 45 recites a similar process requiring passing thermal energy through an IC device wafer to heat a grid of fusible material to form a bond between a cap wafer and the IC device wafer...". This is found persuasive. The requirement is withdrawn.

References Cited

2. The references of interest are cited: Murata (US 6,724,061 B2) shows a structure of a device comprising a substrate 20 for mounting an integrated circuit device 10; a base layer which serves as a cap 34 mounted on the substrate 20 to form between a plastic cap and the substrate and enclosed space for the active side of the integrated circuit device, whereas the cap may have at least one of the properties of not allowing moisture to pass (see column 4, line 40); and an adhesive layer 36 which is a bond layer formed between the substrate 20 and the cap 34. However, Murata fails to teach having a thermal bond formed between the substrate 20 and the plastic cap to effectively seal the enclosed space so as to prevent the ingress of moisture or particulates, the thermal bond being formed by first passing thermal energy through the substrate to heat the junction as set forth in the claimed invention.

Minervini (US 6,781,231 B2) teaches bonding a solder, erg., between the caps 25a and 25b and a substrate. Nakashima (US 6,531,770 B2) teaches attaching a cap to a

substrate with an adhesive 201. Cho (US 6,445,053 B1) teaches applying a bond layer 24 between a semiconductor membrane 12 and a glass or Si substrate 32. Also please see Nose (JP 62-248242) in Figs. 1 and 2, Osaka (JP 57-153452) in Fig. 2, and Miura (JP 58-153354) in Fig. 2.

Allowable Subject Matter

3. Claims 1-45 are allowed.

The following is an examiner's statement of reasons for allowance: Please see the above discussion in paragraph 2 above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Telephone Inquiry Contacts

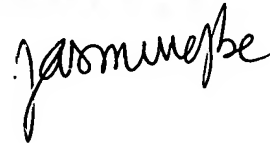
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine J. Clark whose telephone number is (571) 272-1726. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jjbc/03/19/05

JASMINE CLARK
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Jasmine Clark", written over the printed name and title.